

### Module Handbook

Module Name:	Medicinal Chemistry
Module Level:	Bachelor
Abbreviation, if applicable:	Lecture KIM401 Practical Work KIM403
Sub-heading, if applicable:	
Courses included in the module, if applicable:	
Semester/term:	1 / Fourth year
Module coordinator(s):	Prof.Dr. Siswandono, M.S.
Lecturer(s):	Prof.Dr. Siswandono, M.S. Dr. Bambang Tri Purwanto, M.S. Prof.Dr. Purwanto Drs. Suko Hardjono, M.S. Dra. Nuzul Wahyuning Diyah, M.Si. Tri Widiandani, S.Farm, Sp.FRS
Language:	Bahasa Indonesia
Classification within the curriculum:	Compulsory Course/ <del>Elective Studies</del>
Teaching format/class hours per week during the semester:	Lecture 150 minutes lectures, 13 lecture classes/semester Practical Work 100 minutes practical work classes, 13 practical work classes /semester
Workload:	Lecture Total 32 hours a semester Practical Work Total 22 hours a semester
Credit Points:	Lecture 3 Practical Work 1
Requirements:	Physical Chemistry (KIF201) and Practical Work of Physical Chemistry (KIF206), Organic Chemistry II (KIO203), Pharmacology and Toxicology I (FAT301)
Learning goal/competencies:	Knowledge – To understand the concept of medicinal chemistry Skills – Honesty, discipline, teamwork – Critical thinking, comprehensive, and valid scientifically and academically – Actively accessing newest primer information and discussing to make scientific-academic decision Competence – Able to apply medicinal chemistry knowledge in pharmaceutical field, particularly in choosing which drug is the best among the derivative compound based on the relation between structure-activity, and in drug development research
Content:	Lecture

	<p>Introduction of medicinal chemistry, relation between structure with biological membrane penetration process and drug-biopolymer interaction, relation of structure-change with metabolism of drug, physicochemical characteristic with biological activity of drug, structure with drug-receptor interaction, quantitative relation of structure with biological activity of drug, relation between structure with compound activity which work in autonomic nerve system, steroid hormone, analgesic and NSAID, antibiotic, anti-infection, anti-cancer, anti-histamine, cardiovascular drug, and CNS drug.</p>
	<p>Practical Work Introduction of medicinal chemistry, relation between structure with biological membrane penetration process and drug-biopolymer interaction, relation of structure-change with metabolism of drug, physicochemical characteristic with biological activity of drug, structure with drug-receptor interaction, quantitative relation of structure with biological activity of drug, relation between structure with compound activity which work in autonomic nerve system, steroid hormone, analgesic and NSAID, antibiotic, anti-infection, anti-cancer, anti-histamine, cardiovascular drug, and CNS drug.</p>
<p>Study/exam achievements:</p>	<p>Lecture Student are considered to be competent and pass if at least get 50% of maximum mark of the exams based learning.</p> <p>Final score (NA) is calculated as follow : 10% structural task + 45% Exam I + 45% Exam II</p> <p>Final index is defined as follow : A : 100 &gt; NA &gt; 75 AB : 75 &gt; NA &gt; 70 B : 70 &gt; NA &gt; 65 BC : 65 &gt; NA &gt; 60 C : 60 &gt; NA &gt; 55 D : 55 &gt; NA &gt; 50 E : 50 &lt; NA</p> <p>Practical Work Student are considered to be competent and pass if at least get 50% of maximum mark of the exams based learning.</p> <p>Final score (NA) is calculated as follow : 10% discussion + 10% Pretest + 20% Practice + 10% Report + 25% Exam I + 25% Exam II</p> <p>Final index is defined as follow : A : 100 &gt; NA &gt; 75 AB : 75 &gt; NA &gt; 70 B : 70 &gt; NA &gt; 65 BC : 65 &gt; NA &gt; 60 C : 60 &gt; NA &gt; 55</p>

	D : 55 > NA > 50 E : 50 < NA
Forms of Media:	LCD projector, whiteboard, loudspeaker, internet
Literature:	1. Siswandono, ed., 2016. <i>Kimia Medisinal I</i> . Surabaya: Airlangga University Press
	2. Beale, J.M. and Block, J.H. eds., 2011. <i>Wilson and Gisvold's Textbook of Organic Medicinal and Pharmaceutical Chemistry</i> . 12 <sup>th</sup> ed., Philadelphia: Lippincott Williams & Wilkins.
	3. Siswandono, ed., 2016. <i>Petunjuk Praktikum Kimia Medisinal</i> , Surabaya.
	4. Lemke, T.L., Williams, D.A., Roche, V.F. and Zito, S.W. eds., 2013. <i>Foye's Principles of Medicinal Chemistry</i> . 7 <sup>th</sup> ed., Baltimore: Lippincott Williams & Wilkins.
	5. Patrick, G.L., 2013. <i>An Introduction to Medicinal Chemistry</i> . 5 <sup>th</sup> ed., Oxford: Oxford University Press.
	6. Kar, A., 2007. <i>Medicinal Chemistry</i> . 4 <sup>th</sup> ed., New Delhi: New Age International (P) Ltd., Publishers.
	7. Nogrady, T. and Weaver, D.F., 2005. <i>Medicinal Chemistry, A Molecular and Biochemical Approach</i> . 3 <sup>rd</sup> ed., Oxford: Oxford University Press.
	8. Kar, A., 2004. <i>Advanced Practical of Medicinal Chemistry</i> , New Delhi: New Age International (P) Ltd., Publishers.
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